

Intro to Stats: Homework 3.4 (10th edition)

- Some of these problems were taken from the textbook, though most have been redesigned. You may find answers to some of these problems in the back of your book.
- **You may do your work right here on this page.**

1. Men have heights with a mean of 176 cm and a standard deviation of 7 cm.

Women have heights with a mean of 162 cm and a standard deviation of 6.4 cm.

Some famous Men & Women

Men	height (cm)	z-score		Women	height (cm)	z-score
LeBron James	203			Taylor Swift	180	
Albert Einstein	175			Meryl Streep	168	
Danny DeVito	152			Rosa Parks	160	

a) For the six people on the chart above, find the z-scores for their heights, and write those z-scores on the chart. Show some work in the space below the chart. (Remember: We usually round z-scores to 2 decimal places.)

b) Which of the people above have heights **outside** the normal range. (Your textbook defines what it means for a z-score to be considered unusual, which corresponds to a height outside the normal range.)

2. Using the parameters from problem 1, what would be the height of a man with a z-score of 2.00?

3. The table below shows the scores earned by Intro to Stats students on the first exam during six recent semesters. (Scores are out of 80.) Show your work to answer the questions below.

25	48	56	63	70	74	77	82
28	49	56	63	70	74	77	83
34	49	58	64	70	74	77	
34	50	59	64	71	74	77	
36	50	59	64	71	75	77	
38	50	59	65	72	75	77	
39	50	60	65	72	75	77	
41	51	60	66	72	75	78	
41	51	60	66	72	75	78	
41	51	60	67	73	75	78	
42	52	61	67	73	75	78	
42	53	61	67	73	75	79	
43	54	61	67	73	75	79	
43	55	61	67	73	76	79	
43	55	62	67	73	76	80	
45	55	62	67	73	76	80	
46	55	62	68	73	76	80	
46	55	62	68	73	77	80	
46	56	63	69	74	77	81	
48	56	63	69	74	77	81	

- a) What is the percentile for a score of a raw score of 60? (That is, what percentage of scores does 60 exceed?)

- b) What is the percentile for a score of 77?

- c) What raw score is at the 50th percentile? (That is, what raw score exceeds 50% of the raw scores?)

- d) What raw score is at the 90th percentile?

- e) Tell me in words: What do we mean by the 90th percentile?